UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/680,379	10/06/2003	Hagen Klauk	MUH-12807	5870

24131 7590 01/16/2007
LERNER GREENBERG STEMER LLP
P O BOX 2480
HOLLYWOOD, FL 33022-2480

EXAMINER	
CHACKO DAVIS, DABORAH	
ART UNIT	**PAPER NUMBER**
1756	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/16/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/680,379	KLAUK ET AL.	
	Examiner	Art Unit	
	Daborah Chacko-Davis	1756	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *an RCE filed on 12/22/2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-24* is/are pending in the application.

4a) Of the above claim(s) *16-24* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-15, are rejected under 35 U.S.C. 102(b) as being anticipated by U. S. Patent No. 5,942,374 (Smayling).

Smayling, in the abstract, in col 1, lines 58-67, in col 2, lines 1-16, in col 5, lines 21-67, discloses a method of doping an organic conductive layer wherein a substrate is coated with a polyimide, and doped with a dopant gas followed by exposure through a mask to radiation so as to form a doped region (fixing the doping substance in the polyimide layer via a covalent bond, i.e., conjugated sequences of single and double bond, the doped region becomes conducting). Smayling, in col 10, lines 12-17, discloses that the remaining portion (less doped, residual dopant) of the mask layer (polyimide or PR) is removed. Smayling, in col 6, lines 56-67, discloses a gate electrode provided with a layer that is less transmissive (a more absorbing layer, light opaque regions) above the gate electrode resulting is a less irradiated region (unexposed sections). Smayling, in col 5, lines 35-42, discloses that the organic layer is heavily irradiated so as to form a doped and undoped region in the polyimide layer such that the source and drain regions are in electrical contact with the doped portion of the

doped polyimide region having increased electricity (see figure 1, current flows from reference 18 to reference 20 via channel reference 24). Smayling, in col 1, lines 57-67, in col 2, lines 1-17, in col 4, lines 1-54, discloses that the substrate is transparent to radiation (glass), forming source region, drain region spaced apart from the gate region, forming a gate dielectric (gate insulating region) positioned spaced apart from the source and drain regions and spaced apart from the gate electrode, wherein the source, the drain, the gate insulator, the gate electrode are spaced apart with the organic semiconducting layer. Smayling, in col 10, lines 1-29, discloses that after the removal of the undoped regions of the mask, the now exposed regions (masked previously) of the polyimide is restored i.e., the neutral polyimide in the unexposed regions that were previously n-doped and p-doped regions, after the removal of the mask layers, is restored to its original conductivity (claims 1-3, 6-9, 12). Smayling, in col 5, lines 43-49, in col 7, lines 1-8, discloses that the exposure is performed section by section (selectively scan one portion at a time) (claims 4, 10-11). Smayling, in col 6, lines 56-58, discloses that the exposure is performed through a mask (claim 5). Smayling, in col 1, lines 65-67, in col 2, liens 1-3, discloses that the source region, the drain region and the gate region are simultaneously formed on the substrate (claim 13). Smayling, in col 10, lines 60-67, discloses that the gate insulating material includes material transparent to radiation (transmissive regions, reference 20a of layer 16, see figure 15) (claims 14-15).

Response to Arguments

3. Applicant's arguments filed December 22, 2006, have been fully considered but they are not persuasive. The 102 rejection made in the previous office action is maintained.

A) Applicants argue that Smayling does not disclose removing unbounded doping substance from the organic compounds after the exposure.

Smayling, in col 10, lines 1-17, and in figures 12-13, discloses that after exposure, and removal of photoresist mask, doping is performed and that selected portions of the doped regions were formed and that masked regions with unbounded doped substance (not bounded or not heavily doped) are removed i.e., unbounded doping substance is removed form the polyimide surface.

B) Applicants argue that Smayling does not disclose restoring original electrical conductivity in the unexposed regions.

Smayling, in col 10, lines 1-29, and in figures 12-13, discloses that after the removal of the undesired mask regions (unbounded substance is removed) the n-doped and p-doped regions of the polyimide, that were unexposed during exposure process, are exposed and are electrically conductive i.e., removal of the masked layer restores the unexposed portions of the polyimide to its original conductivity.

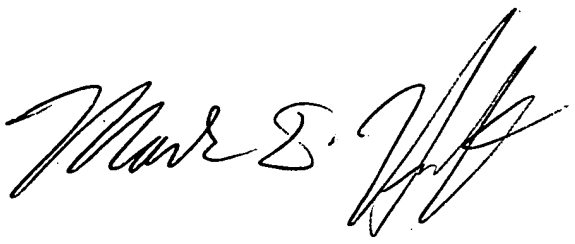
Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daborah Chacko-Davis whose telephone number is (571) 272-1380. The examiner can normally be reached on M-F 9:30 - 6:00. If

attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark F Huff can be reached on (571) 272-1385. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

dcd

January 5, 2007.



MARK F. HUFF
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700